The Global Economy and Central Banks’ Policies

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Central Banking & the Global Economy

• Growth in the Global Economy

• Trade in the Global Economy

• Monetary Policy

• Normalization
ECONOMIC GROWTH
Global GDP Growth

Source: IMF, last update Apr 18 2017, WEO (2016, & 2017 Forecast)
Industrial Countries, GDP Growth

## Real GDP Growth, World Economy

<table>
<thead>
<tr>
<th>Country</th>
<th>2009</th>
<th>2010</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>World</strong></td>
<td>-0.1</td>
<td>5.4</td>
<td>3.1</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Industrial Countries</strong></td>
<td>-3.4</td>
<td>3.1</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Developing Countries</strong></td>
<td>2.9</td>
<td>7.4</td>
<td>4.1</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Real GDP Growth, Select Countries

Global GDP Shares

**1990**

- United States: 27%
- Japan: 9%
- China: 10%
- EU-27: 22%
- Latin America: 7%
- Other Emerging Economies: 16%

**2017 IMF Forecast**

- United States: 16%
- Japan: 4%
- China: 18%
- EU-27: 23%
- Latin America: 8%
- Other Emerging Economies: 15%
- Other Advanced Economies: 7%

Source: IMF, WEO Database, last update Apr 18 2017, WEO
INTERNATIONAL TRADE
World Trade Volume

China’s Role in Global Trade (bill. Usd)

Source: National Bureau of Statistics of China, 12-months through April 2017
U.S. Exports by Destination

**2000**
- EU: 48.1%
- Asia ex China: 44.3%
- China: 7.6%

**2007**
- EU: 47.4%
- Asia ex China: 36.5%
- China: 16.1%

**2017**
- EU: 41.8%
- Asia ex China: 33.0%
- China: 25.3%

Source: US Department of Commerce, Last Observation: Feb 2017
European Union Exports by Destination

2000
- Asia ex China, 38.2%
- US, 56.6%
- China, 5.2%

2007
- Asia ex China, 38.4%
- US, 48.9%
- China, 12.6%

2017
- Asia ex China, 36.3%
- US, 42.5%
- China, 21.3%

Source: Eurostat, Last Observation: Feb 2017
Current Account of Balance of Payments

Foreign Exchange Reserves (Bill. Usd)

Gross National Savings as a % of GDP, 2016

Source: IMF World Economic Outlook; last update Oct 08, 2016

Savings as % of GDP

- China: 46
- India: 30
- Japan: 25
- Euro Area: 24
- United States: 18

Source: IMF World Economic Outlook; last update Oct 08, 2016
MONETARY POLICY
Central Bank Policy Interest Rate

Source: Bloomberg Market Data, Last observation: 16 Jun, 2017
Global Policy Rates: Developed Markets

Source: JPMorgan Chase, National Statistical Institutes, Last Observation: Nominal - April 2017; Real - April 2017
Total Assets of Key Central Banks (indexed levels)

Current Assets
Billions of $

<p>| | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Total</td>
<td>13,775</td>
<td></td>
</tr>
<tr>
<td>Of Which:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fed</td>
<td>4,476</td>
<td></td>
</tr>
<tr>
<td>ECB</td>
<td>4,722</td>
<td></td>
</tr>
<tr>
<td>BoJ</td>
<td>4,576</td>
<td></td>
</tr>
</tbody>
</table>

Current Assets
% of GDP

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Fed</td>
<td>23.1%</td>
<td></td>
</tr>
<tr>
<td>ECB</td>
<td>38.5%</td>
<td></td>
</tr>
<tr>
<td>BoJ</td>
<td>92.4%</td>
<td></td>
</tr>
</tbody>
</table>

Fed Dot Plot, June 2017

- Percent, midpoint of target range or target level

Fed Dot Plot, September 2016

- Percent, midpoint of target range or target level
Fed Dot Plot June 14, 2017 FOMC meeting

Percent, midpoint of target range or target level

Note: Market expectations are derived from USD 1-month overnight-indexed-swap (OIS) forward rates
Source: Federal Reserve and Bloomberg
FEDERAL RESERVE’s Forward Guidance

“In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation…In light of the current shortfall of inflation from 2 percent, the Committee will carefully monitor actual and expected progress toward its inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run.”

FOMC statement, February 1, 2017

“Inflation on a 12-month basis is expected to remain somewhat below 2 percent in the near term but to stabilize around the Committee's 2 percent objective over the medium term. Near-term risks to the economic outlook appear roughly balanced, but the Committee is monitoring inflation developments closely...In view of realized and expected labor market conditions and inflation, the Committee decided to raise the target range for the federal funds rate to 1 to 1-1/4 percent...The Committee expects that economic conditions will evolve in a manner that will warrant gradual increases in the federal funds rate...However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.”

FOMC statement, June 14, 2017
Bank of England’s Forward Guidance

“The MPC sets policy to achieve the 2% inflation target...The fall in sterling is likely to push up on CPI inflation in the near term, hastening its return to the 2% target and probably causing it to rise above the target in the latter part of the MPC’s forecast period, before the exchange rate effect dissipates thereafter...These developments present a trade-off for the MPC between delivering inflation at the target and stabilising activity around potential...in tolerating a temporary period of above-target inflation, the Committee expects the eventual return of inflation to the target to be more sustainable.”


“The Bank of England’s Monetary Policy Committee (MPC) sets monetary policy to meet the 2% inflation, and in a way that helps to sustain growth and employment...CPI inflation has risen above the MPC’s 2% target as the depreciation of sterling has begun to feed through to consumer prices...the MPC’s remit specifies that, in such exceptional circumstances, the Committee must balance any trade-off between the speed at which it intends to return inflation sustainably to the target and the support that monetary policy provides to jobs and activity....Monetary policy can respond, in either direction, to changes to the economic outlook as they unfold to ensure a sustainable return of inflation to the 2% target.”

-Minutes of the MPC meeting May 11, 2017
ECB’s and BoJ’s Forward Guidance

**ECB**
“...Our monetary policy measures have continued to preserve the very favourable financing conditions that are necessary to secure a sustained convergence of inflation rates towards levels below, but close to, 2% over the medium term....the economic expansion has yet to translate into stronger inflation dynamics...Therefore, a very substantial degree of monetary accommodation is still needed for underlying inflation pressures to build up and support headline inflation in the medium term...if financial conditions become inconsistent with further progress towards a sustained adjustment in the path of inflation, we stand ready to increase our asset purchase programme in terms of size and/or duration”

-ECB President Mario Draghi, Introductory statement, June 8, 2017

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**BOJ**
“The Bank will continue with "Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control," aiming to achieve the price stability target of 2 percent, as long as it is necessary for maintaining that target in a stable manner...The Bank will make policy adjustments as appropriate, taking account of developments in economic activity and prices as well as financial conditions, with a view to maintaining the momentum toward achieving the price stability target”

-Statement of Monetary Policy, March 16, 2017
NORMALIZATION

• Cost of Delayed Normalization

• Normalization Criteria
Cost of Delayed Normalization---I

- Chase After Yield Raises Risk
- Inflates Stock prices (Bubbles)
- Encourages Stock buybacks
- Discourages Real Investment
- Disconnects Financial/Real Sectors
- Encourages Increased Leverage
- Endangers Financial Stability
Cost of Delayed Normalization--II

- Weakens the Transmission and Effectiveness of Monetary Policy
- Stimulates Investment in Interest-Sensitive Low-Productivity Sectors
- Postpones Fiscal/Structural Policies
- Reduces Productivity and Growth
Unemployment Rate: US and Euro Area

Source: Eurostat and BLS; Last observation for Euro area April 2017, For US, May 2017
U.S. Unemployment, by Level of Education

(Unemployment Rate in %)

- No high school diploma
- High school diploma
- Total
- Some college
- College degree or higher

No HS diploma: 6.1%
HS diploma: 4.7%
Total: 4.3%
Some college: 4%
College or higher: 2.3%

Source: Bureau of Labor Statistics, Last Observation: May 2017
Euro Area Unemployment by Level of Education

Source: Eurostat, Last observation Q4 2016
Unemployment Rate: Euro Area Countries

Source: Eurostat, Last Observation: Germany (5/17); Italy, Spain, Euro area (4/17); Greece (2/17)
Relative Unit Labor Cost: U.S. & Euro area

Note: Relative unit labor cost is a weighted average of changes in unit labor costs (converted to USD terms) relative to trading partners, with weights derived from manufactured goods exports.

Source: OECD, Last observation: Q1 2017
Relative Unit Labor Cost, Total Economy

Last observation:

<table>
<thead>
<tr>
<th>Region</th>
<th>Index (Q1 2001 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euro Area</td>
<td>103.2</td>
</tr>
<tr>
<td>Germany</td>
<td>91.7</td>
</tr>
<tr>
<td>Italy</td>
<td>113.8</td>
</tr>
<tr>
<td>Spain</td>
<td>100.3</td>
</tr>
<tr>
<td>Greece</td>
<td>110.4</td>
</tr>
</tbody>
</table>

Note: Relative unit labor cost is a weighted average of changes in unit labor costs (converted to USD terms) relative to trading partners, with weights derived from manufactured goods exports.

Source: OECD, Last observation: Q1 2017
Inflation: U.S. and Euro Area

Source: J.P. Morgan

Source: Bureau of Economic Analysis, ECB. Last observation US: March 2017, Euro area: April 2017
US: Gross Debt Outstanding by Sector

Source: Haver analytics; last observation Q1 2017.
Euro Area: Gross Debt Outstanding by Sector

Source: Eurostat; last observation Q4 2016.
Japan: Gross Debt Outstanding by Sector

Source: Haver analytics; last observation Q4 2016.
THANK YOU